



Version 1.0

Owner's Manual

March 2004

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discWelder BRONZE

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1 Introduction to discWelder BRONZE

Welcome to discWelder BRONZE, the high-resolution DVD-Audio creation program from Minnetonka Audio Software. With BRONZE, you can create ultra-high-fidelity DVD-Audio discs that will allow you to play your tracks on any commercially-available DVD-Audio player that supports the DVD-R/RW formats. You can import surround and stereo tracks, as well as different bit- and sample-rate tracks, onto the same disc. Here are a few points to keep in mind:

Activation Key: YOU MUST REGISTER THIS PRODUCT WITHIN 14 DAYS OF INSTALLATION to receive an Activation Key (to continue to use the program). We've given you three ways to do it: e-mail, fax, or the mail. It's easy - simply follow the on-screen prompts (see Figure 1-1), either when you install the program, or when you open it again (within 14 days of install, of course).

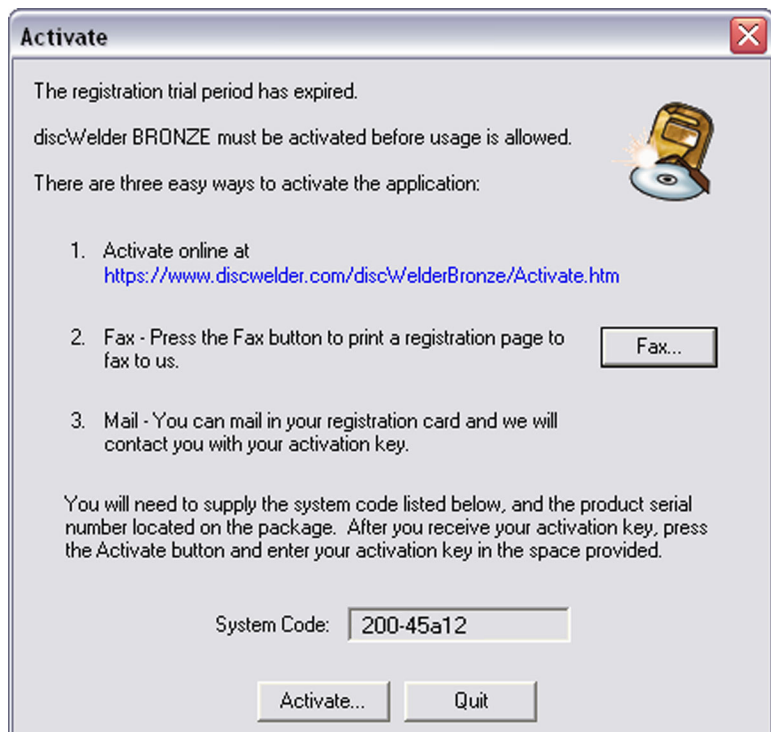


Figure 1-1

Space: your available hard drive space should always equal at least 2X the program size that you wish to burn onto a DVD-R. A safe amount of free hard drive space is 10GB, because a DVD holds nearly 5GB.

Temps: under “Options” on the menu bar you can set the parameters for the temporary file destination (used while burning the disc). This should be a hard drive that has enough free space (see above).

Closing Time: BRONZE needs up to 15 minutes of closing time once the disc is written (as do all DVD-Audio authoring programs), because a DVD has up to 4.7 billion bytes of data to be scanned in order to properly format the directory and lead-in / lead-out areas of the disc.

Pause Between Tracks: A pause before a selected track plays, if desired, is set under the Track Properties (right-click on the Track name, click on “Properties”) as a “Pause” in milliseconds. There is, however, a very short space (under a few hundred milliseconds) automatically added before some tracks by some DVD-A players.

Gapless Tracks: BRONZE lets you specify that adjacent tracks with identical Track parameters play without a gap or pause, i.e. ”Gapless”, in all currently-manufactured DVD-A players.



2.2 The Browse window

Use this window to navigate to the folder that holds the soundfiles you wish to import into BRONZE.

2.3 The Toolbar

The Toolbar gives you one-click access to the most commonly used menu items. For more information, see “Toolbar”.

2.4 The Soundfile window

This is where you view the soundfiles you will use to build your playlist in the Album window.

2.5 The Album window

The Album window is where you assemble the playlist of soundfiles that will make up your DVD-A disk.

2.6 Disc Capacity Indicator

In the lower-right-hand corner of the discWelder BRONZE Main Screen, you will find a set of numbers indicating the size of your current project in gigabytes (GB) and the percentage of disc capacity utilized (see Figure 2-2). These numbers will change from black to **RED** if you exceed 95% of the full DVD-Audio disc capacity (approx. 4.7GB), due to disc and player headroom requirements. While some discs may burn and play with more than 95% capacity filled, we have chosen to warn you at a safe level.



Figure 2-2

3 Creating an Album

To Create an Album, go to the File menu and select "New". The bottom window will now be ready to start a new Album (see Figure 3-1).

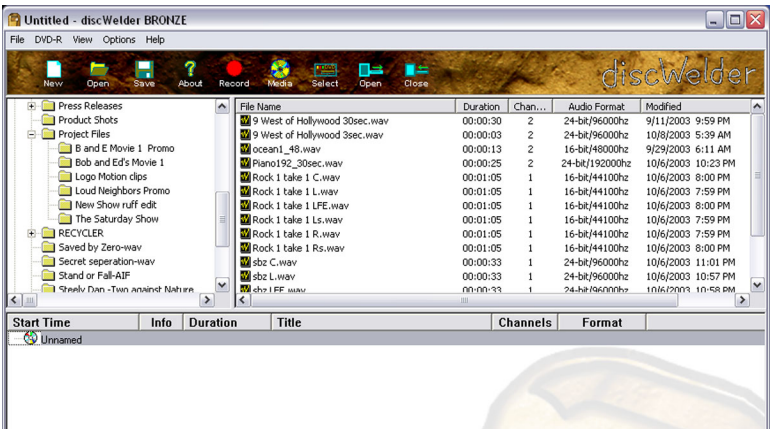


Figure 3-1

The first line of the Album is the Album Name line. To name the Album, right-click on this line and a menu will appear (see Figure 3-2).



Figure 3-2

Select "Rename Album". A window will appear where you may enter an Album name (see Figure 3-3).



Figure 3-3

When you are finished entering the Album Name, hit the “Enter” key, the new Album name will appear in the first line (see Figure 3-4).

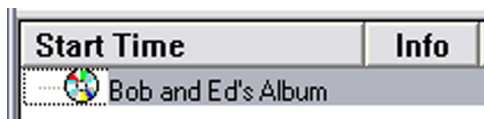


Figure 3-4

3.1 Creating a Track

The 6 lines under the Track line are where the 6 mono soundfiles from your 5.1 Surround mix are assigned. The symbols stand for:

L = Left front

R = Right front

C = Center (front center)

Lfe = LFE (Low Frequency Effect, or Subwoofer)

Ls = Left surround (left rear)

Rs = Right surround (right rear)

You assign the different soundfiles to the Track channels by “drag-and-drop”, or by double-clicking on the soundfile.

Please refer to “**Appendix A: Allowable Audio Formats**” for a list of the digital audio file formats that are supported in the DVD-Audio specification. Note that 5.1 Surround recordings with bit depths/sample rates of 24/96, 20/96, 24/88.2, or 20/88.2 normally require MLP encoding. However, you can import these files into BRONZE, where they will be converted automatically (a Warning window will appear - see Figure 3-5) to 5.1 Surround 24/48 or 24/44.1 files during the disc-burning process.

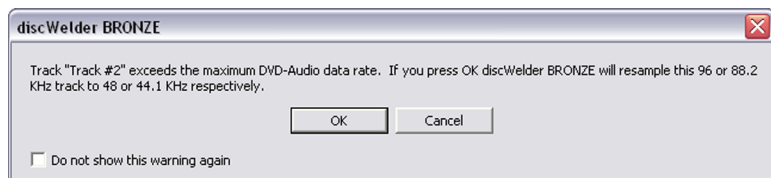


Figure 3-5

Note: the DVD-Audio specification allows for fewer than “5.1” channels in any Track. For example, you can have L, R, Ls, and Rs channels

only on a track, without the C or LFE channels. Simply drag the appropriate .wav (or .aiff) soundfiles to the channels you need, and leave the undesired channels empty.

Since there are no Tracks in this Album yet, BRONZE will assume that the first soundfile you select is the Left channel soundfile of the first Track of the Group. When you double-click on a soundfile in the soundfile window, BRONZE will automatically create a new Group under the Album line, create a new Track, and place the soundfile into the first soundfile line of the new Track (see Figure 3-6).

Figure 3-6

After placing the soundfile in the Track, the selection bar (the dark highlight line) moves to the next soundfile line. This indicates that the next soundfile that is chosen will go on this line. When you double-click the next soundfile, it goes to this line, and the selection bar moves to the third line (see Figure 3-7).

Figure 3-7

You can keep double-clicking on soundfiles (in the correct order) until all the soundfile lines are full. When the last soundfile is added to the Track, the selection bar moves back to the Group line. The next time you double-click on a soundfile, BRONZE will assume that you want to start a new Track. It will create the next Track, add the soundfile to the first soundfile line, and continue the same process as the previous Track (see Figure 3-8).

Start Time	Info	Duration	Title
Bob and Ed's Album			
Group #1			
00:00:00		00:01:05	Rock 1
	L		D:\AES\Rock 1 take 1 L.wav
	R		D:\AES\Rock 1 take 1 R.wav
	C		D:\AES\Rock 1 take 1 C.wav
	Mc		D:\AES\Rock 1 take 1 LFE.wav
	Ls		D:\AES\Rock 1 take 1 Ls.wav
	Rs		D:\AES\Rock 1 take 1 Rs.wav
00:01:05		00:00:33	Track #2
	L		D:\AES\sbz L.wav
	R		
	C		
	Mc		
	Ls		
	Rs		

Figure 3-8

Soundfiles may also be assigned to the six channels using the drag-and-drop method.

To name a Track (for your Album project files), right-click on the Track line, and select "Rename Track". A window will appear on the Track line where you can enter a name (see Figure 3-9).

Start Time	Info	Duration
Bob and Ed's Album		
Group #1		
	Track #1	

Figure 3-9

You can continue to add Tracks, up to 99 total (depending on total content size). Right-click on the Group line, and select "New Track".

3.2 Replacing Soundfiles

You can also use the double-click shortcut to replace soundfiles. If you accidentally put the wrong soundfile on a line, select the line by left-clicking on it, and then double-click on the soundfile that you want to replace it. BRONZE will ask you what the new soundfile should be (see Figure 3-10).

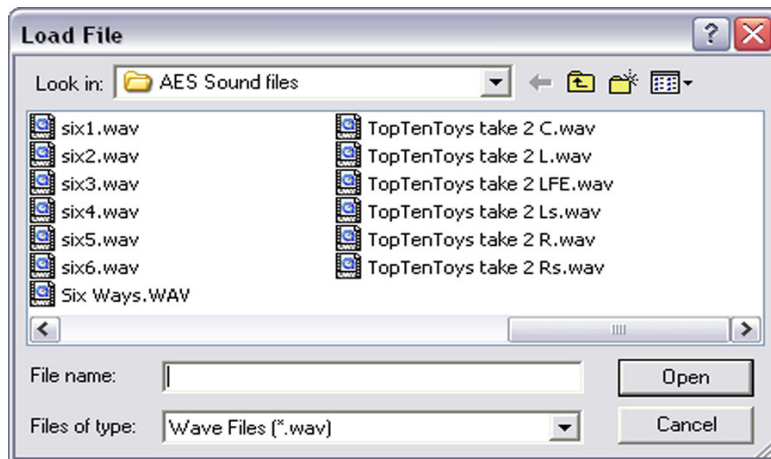


Figure 3-10

3.3 Stereo Tracks

In addition to 5.1 Surround Tracks, you can add Stereo Tracks. Just drag a stereo soundfile to the "L" channel of the Track, and BRONZE will change the track from a listing of 6 channels to a listing labeled "S", for "Stereo". You can also change the default track type from "Surround" to "Stereo" in the Track Properties section of the right-click track menu (see "Track Properties"). Stereo Tracks may contain either two mono files (L and R) or interleaved stereo files.

3.4 Saving your Album

Go to the File menu and click on Save As. Give your Album a filename, and click OK.

3.5 Recording your Album onto DVD

Simply click on the **RED** record button on the Toolbar.

4 Menu Items

This chapter describes the items in the menus at the top of the Main Screen.

4.1 The File Menu

Figure 4-1 shows the File menu.

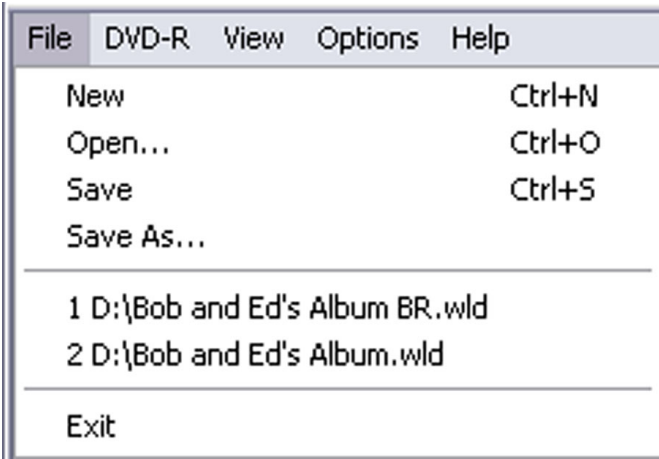


Figure 4-1

4.1.1 The New command

This command closes the Album in the bottom window, and presents a blank window for starting a new Album. A prompt will ask if you want to save the previous Album.

4.1.2 The Open command

This command opens a previously saved Album and places it in the bottom window.

4.1.3 The Save command

This command saves the current state of the Album in the bottom window, under the current filename.

4.1.4 The Save As command

Same as the Save command, except it allows you to type in a new file-name. The current state of the Album will be saved under the new name.

4.1.5 Recent Files

In the middle of the File Menu is a list of (up to) the last 4 Albums that were open in BRONZE. By clicking on any one of these, the Album will be opened in the bottom window.

4.1.6 The Exit command

This closes the BRONZE program.

4.2 The DVD-R menu

Figure 4-2 shows the DVD-R menu. These menu items relate to the DVD-R disk burner.



Figure 4-2

4.2.1 The Record Disc command

This command brings up the Record Disc window (see Figure 4-3).

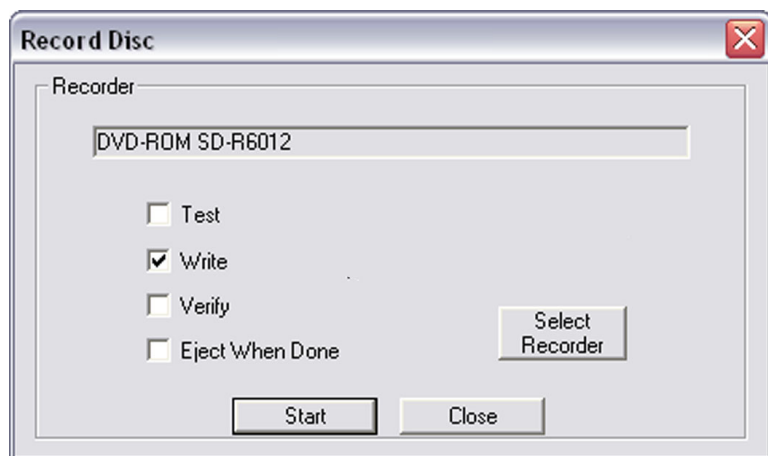


Figure 4-3

You may start writing a disk from this window. There are also several options you can select here.

Note: BRONZE will record one (1) DVD-Recordable disc at a time, at a default burn speed of “Maximum” (which is dependent on burner and media properties).

4.2.1.1 Test / Write / Verify

To write your Album to a disk, select the "Write" option, and click on the "Start" button.

If there is any doubt that your computer system can keep up with the necessary data rate to write the disk, you can use the "Test" option. Select "Test" and click on the start button. BRONZE will go through the entire disk writing procedure except for putting the data on the disc.

If both options are selected, then they proceed in order when the Start button is clicked. First, the Test is performed. If the system passes the Test, then the Write is performed. The amount of time needed for each process depends on the amount of data in the Disc Image (consisting of

track parameters such as number and length, surround or stereo, bit- and sample-rates, etc.).

Finishing the disc takes up to 15 minutes, depending on the amount of data - a DVD-Audio disc can contain up to 4.7GB.

When the “Verify” option is checked, BRONZE will verify that the data on the newly-burned disc matches the Disc Image data it was burned from. Verification takes place after the disc is burned, and “Verify” can only be selected after the “Write” option is selected. The Verification process takes the same amount of time that the Write process takes, not including finishing time.

Note: Discs cannot be verified independently in BRONZE, i.e. separate from the “Write” process.

4.2.1.2 Select Recorder

This button brings up the Select Recorder window. This is the same as the “Select Recorder” command in the DVD-R Menu (see Section 4.2.4), and the “Select” icon on the Toolbar.

4.2.2 The Media Properties command

This command brings up the Media Properties window (see Figure 4-4).

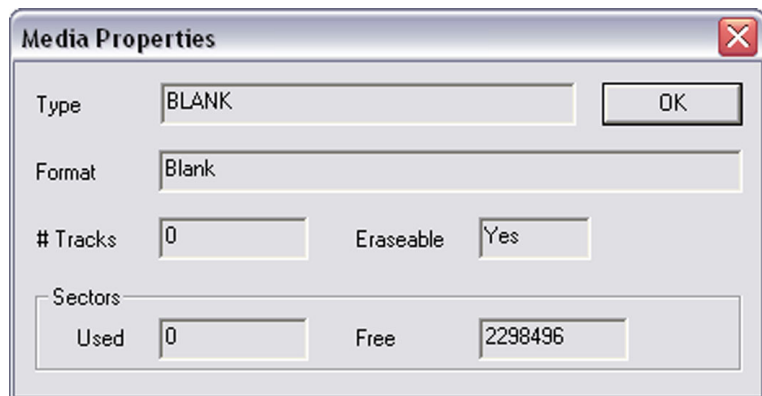


Figure 4-4

This is the same as the "Media" icon on the Toolbar.

4.2.3 The Erase Disc command

If you are using DVD-ReWritable discs, you can erase a disc and re-use it. The Erase Disc command erases the DVD-RW disc that is in the selected drive. When you click on “Erase Disc”, you will have two choices: “Quick Erase” removes the first PMA (Program Memory Table) and the first TOC (Table Of Contents), which makes the disc re-recordable without removing all the data; “Full Erase” completely erases the disc and takes longer.

4.2.4 The Select Recorder command

This command brings up the Select Recorder window (see Figure 4-5).



Figure 4-5

If you have more than one DVD-R disk recorder on your system, you can use this window to choose which one BRONZE will use.

4.2.5 The Open / Close Tray commands

These open and close the disc tray on the selected DVD drive.

4.3 The View menu

Figure 4-6 shows the View menu.

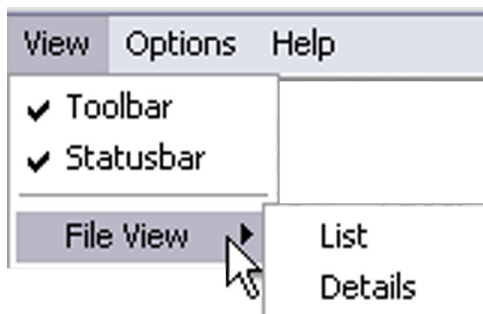


Figure 4-6

4.3.1 The Toolbar command

The Toolbar command lets you show or hide the Toolbar (see “Toolbar”). Clicking on the Toolbar menu item toggles the checkmark on and off. When the checkmark is present, the Toolbar is shown. When the checkmark is gone, the Toolbar is hidden.

4.3.2 The Statusbar command

The Statusbar command toggles the Statusbar (at the bottom of the BRONZE window) on and off. The Statusbar shows the Project status on the left, and the size of the Project on the right (see Figure 4-7)

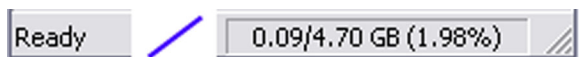


Figure 4-7

4.3.3 The File View command

The File View command controls the way in which the files will be displayed in the soundfile browsing window. Clicking on File View brings up a submenu (see Figure 4-6)

When List is chosen, only the filenames are displayed. When Details is chosen, the windows displays filenames, the duration on the recording, number of channels, audio format, and the date modified.

4.4 The Options menu

Figure 4-8 shows the Options menu.

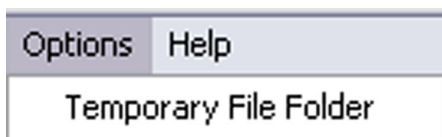


Figure 4-8

4.4.1 The Temporary File Folder command

Clicking on the Temporary File Folder command brings up the “Browse for Folder” window (see Figure 4-9).

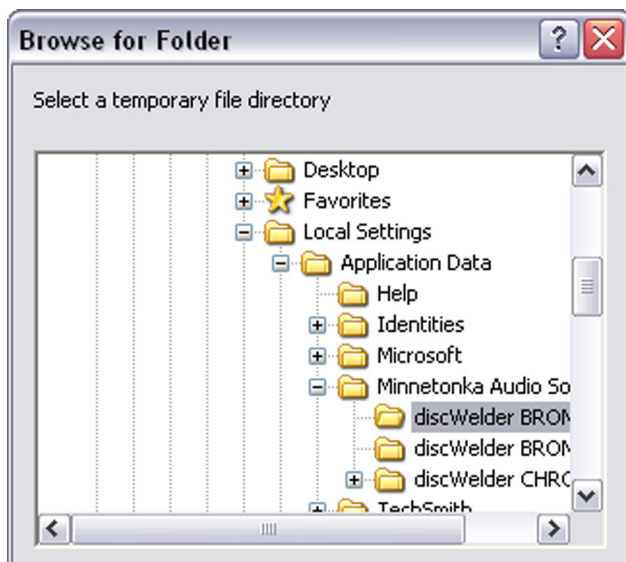


Figure 4-9

This window allows you to specify which directory is used for temporary files. Correctly setting this directory is VERY important, because DVD image files can easily be many gigabytes in size.

4.5 The Help menu

Figure 4-10 shows the Help menu.

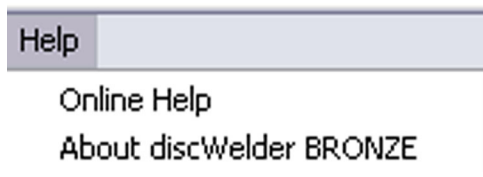


Figure 4-10

4.5.1 The Online Help command

The Online Help command brings up the BRONZE online Help files. This information is in HTML format - the “Online Help” command will start up your internet browser, which will display the Help files.

4.5.2 The About discWelder BRONZE command

Clicking on About BRONZE brings up an information window (see Figure 4-11).



Figure 4-11

This window will display the revision number of this copy of BRONZE, and also displays copyright and contact information.

5 The Toolbar

Figure 5-1 shows the discWelder BRONZE Toolbar.



Figure 5-1

The Toolbar gives you quick access to the most commonly used functions, without the need to go to the menus.

5.1 New

This command closes the Album in the bottom window, and presents a blank window for starting a new Album. A prompt will ask if you want to save the previous Album.

5.2 Open

This command opens a previously saved Album and places it in the bottom window.

5.3 Save

This command saves the current state of the Album in the bottom window, under the current filename.

5.4 About

This command gives you the version number of your BRONZE program. It also gives you contact information for Minnetonka Audio Software.

5.5 Record

Click on this button when you are ready to record a disc. This is the same as the "Record Disc" command in the DVD-R menu (see "the Record Disc command").

5.6 Media

This brings up the Media Properties windows. This is the same as the "Media Properties" command in the DVD-R menu (see "the Media Properties command").

5.7 Select

If you have more than one DVD drive, click on this button to select which drive you are using. This is the same as the "Select Recorder" command on the DVD-R menu (see "the Select Recorder command").

5.8 Open

This opens the tray on the selected DVD-R drive.

5.9 Close

This closes the tray on the selected DVD-R drive.

6 Right-Click Menus

Right-click menus provide an easy way to navigate to the many functions of BRONZE.

6.1 Album right-click menu

Figure 6-1 shows the Album right-click menu.

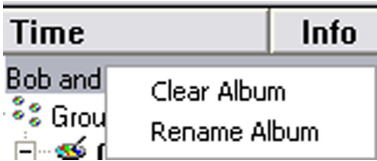


Figure 6-1

6.1.1 Clear Album

This removes the Group and all Tracks from the current Album.

6.1.2 Rename Album

If your Album does not have a name, this will allow you to name it. If your Album already has a name, this will allow you to change the name. This command opens a window on the Album line, where you can type in the name.

6.2 Track right-click menu

Figure 6-2 shows the Track right-click menu.

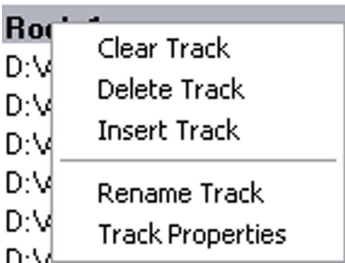


Figure 6-2

6.2.1 Clear Track

This removes all the soundfiles that are assigned to the Track.

6.2.2 Delete Track

This removes the highlighted Track from the Group.

6.2.3 Insert Track

This inserts a new Track in the Group above the highlighted Track.

6.2.4 Rename Track

This lets you name an unnamed Track, or change the name of a named Track. When you select Rename Track, a window opens up on the Track line so you can type in a name.

6.2.5 Track Properties

When you select Track Properties, it brings up the Track Properties window (see Figure 6-3).

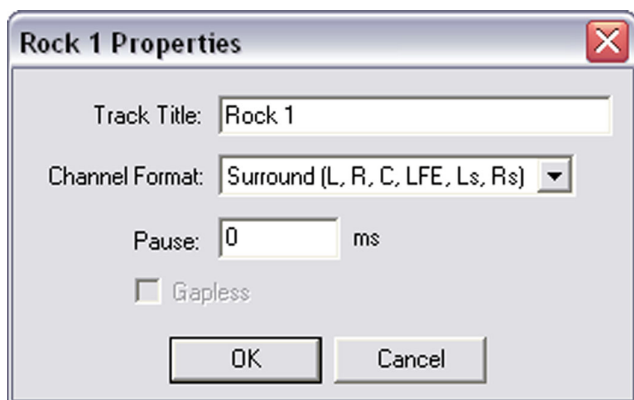


Figure 6-3

6.2.5.1 Track Title

This displays the name of the Track. You can change the Track name in this window.

6.2.5.2 Channel Format

This displays the format of the selected Track. You can chose either 5.1 Surround or Stereo.

6.2.5.3 Pause

BRONZE can insert a “Pause” between tracks of up to 10 seconds. Right-Click on the Track line, click on “Track Properties”, and enter the desired pause between the selected track and the previous track in milliseconds (see Figure 6-4).

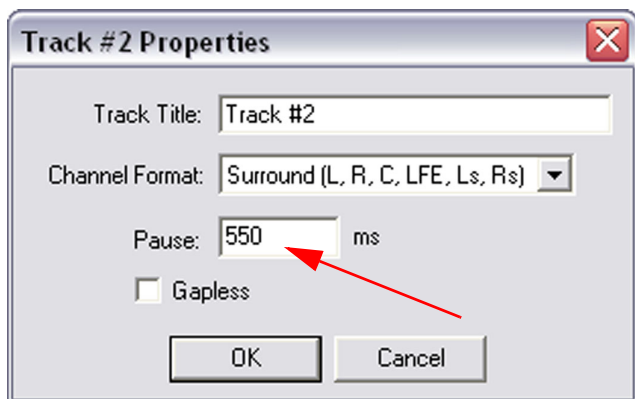


Figure 6-4

Track Pause is indicated by the “P” symbol under the “Info” column. The Pause symbol indicates that a pause exists between the selected track and the PREVIOUS track (see Figure 6-5).



Figure 6-5

6.2.5.4 Gapless

Please see Section 6.4, “Gapless Tracks”.

6.3 Soundfile right-click menu

Figure 6-6 shows the soundfile right-click menu. This menu appears when you right-click on a soundfile line in the Album window.



Figure 6-6

6.3.1 Delete File

This removes the highlighted soundfile from the Track.

6.3.2 Change File

This lets you replace the soundfile with a different soundfile. When you click on "Change File", a dialog appears (see Figure 6-7).

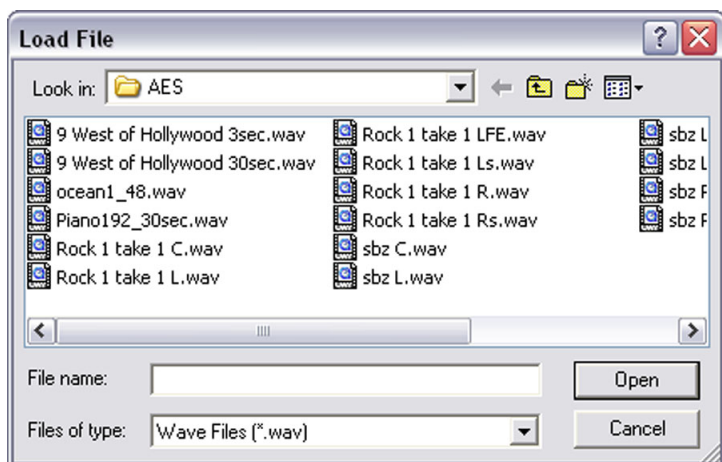


Figure 6-7

In this dialog, you select the new soundfile and hit the "open" button.

6.4 Gapless Tracks

It is possible in discWelder BRONZE to have consecutive Linear PCM tracks (with identical Track parameters - see the Note below) play without a gap or pause (silence) between them. Normally, depending on the DVD-A player, there may be a very small gap between consecutive tracks. BRONZE lets you specify that adjacent tracks play without a gap or pause, i.e. "Gapless", in nearly all currently-manufactured DVD-A players.

6.4.1 Making Gapless Tracks

Note: Gapless play is ONLY possible between Linear PCM tracks with identical channel-number formats, bit-depths, and sample-rates.

To make a track Gapless, Right-Click on the Track line, click on the Track Properties button, then click on the Gapless checkbox (which is active ONLY if Gapless play is possible - see Figure 6-8).

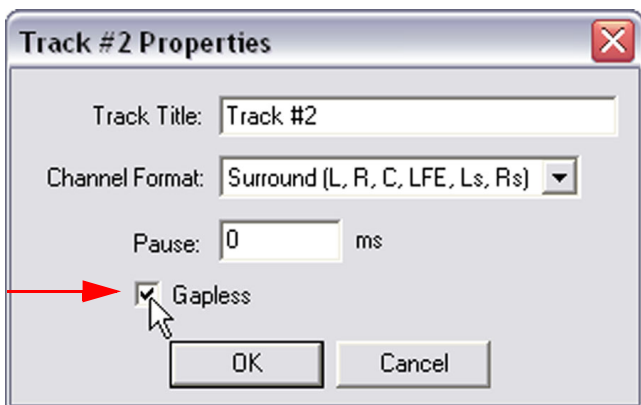


Figure 6-8

Checking this box will make the playback between the selected track and the PREVIOUS track Gapless. The Gapless track symbol is a "G". This symbol under the "Info" column indicates that the track is Gapless with the previous track (see Figure 6-9).

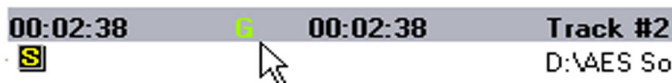


Figure 6-9

7 Appendix A: Allowable Audio Formats

BRONZE allows you to record Stereo or 5.1 Surround recordings in DVD-A-format onto a DVD-R disk.

7.1 Stereo recordings

Stereo recordings can have sample rates of 192, 176.4, 96, 88.2, 48, or 44.1 kHz. Bit depths can be 24-, 20-, or 16-bits.

7.2 5.1 Surround recordings

5.1 Surround recordings can have sample rates of 96, 88.2, 48, or 44.1 kHz. Bit depths can be 24-, 20-, or 16-bits.

NOTE: 5.1 Surround recordings with bit depths and sample rates of 24/96, 20/96, 24/88.2, or 20/88.2 require mandatory encoding to the MLP (Meridian Lossless Packing) file format. An MLP encoder is not included with BRONZE, nor does BRONZE accept MLP files. However, discWelder CHROME can accept files from an external MLP encoder, such as Minnetonka Audio's "SurCode MLP". However, BRONZE will format-convert 24/96 and 24/88.2 files to 24/48 and 24/44.1 files during disc burning - see Section 3.1.

7.3 Multiple formats for different tracks

The DVD-A specification and BRONZE allow for different tracks to have different formats. For instance, Track 1 could be 24/48 5.1 Surround, Track 2 could be 24/192 Stereo, and Track 3 could be 16/44.1 Stereo.

7.4 Different formats on a single track

BRONZE currently does not allow two different soundfile formats on one track. That is, all soundfiles on a single track must have the same sample rate and bit depth.

7.5 Downmix Properties

When a 5.1 Surround Sound recording is played back over a stereo sound system, the DVD-A player must mix 6 channels down to 2 channels. In BRONZE the settings are defaulted to industry standards.